Ontario
Executive Council

Order in Council

On the recommendation of the undersigned, the Lieutenant Governor, by and with the advice and concurrence of the Executive Council, orders that

the appended document entitled "Province of Ontario Nuclear Emergency Plan Part VII - Darlington Nuclear Emergency Plan" respecting emergencies arising in connection with the Darlington nuclear facility be adopted as Part VII of the Province of Ontario Nuclear Emergency Plan, Order in Council numbered 1618/86 formulated under section 8 of the Emergency Plans Act, 1983, being chapter 30.

Recommended _____
Solicitor General

Concurred _____
Chairman

Approved
and Ordered October 5, 1989
Date

_____
Administrator of the Government

FOREWORD

The Province of Ontario Nuclear Emergency Plan parts I through VIII, have been developed pursuant to Section 8 of the Emergency Plans Act, 1983. Numbered copies of the Plan and its various parts are distributed according to the Distribution List appended to the Part I Master Plan. Holders of these numbered copies are responsible for keeping them updated by incorporating numbered amendments, which will be issued from time to time.

Additional copies of the parts of the Nuclear Emergency Plan are available, for official use, from Emergency Planning Ontario, and for others, in Toronto, at:

Government of Ontario Bookstore
Main Floor, 880 Bay Street

(416) 965-2054

or, from outside Toronto, through:

Ministry of Government Services
Mail Order Service
5th Floor, 880 Bay Street
Toronto, Ontario
M7A 1N8

(416) 965-6015
Toll-free: 1-800-268-7540

This plan is administered by the Solicitor General of Ontario. All comments and suggestions relating to it should be directed to:

Ministry of the Solicitor General
Emergency Planning Ontario
5th Floor, 27 Carlton Street
Toronto, Ontario
M5B 1L2

(416) 965-6708

Copies of the plan have been made available to the relevant area public libraries for the information of the public. A copy of the plan is also available to the public for inspection and copying during ordinary business hours at the offices of Emergency Planning Ontario at the above address.

Copy No. ____

PROVINCE OF ONTARIO

NUCLEAR EMERGENCY PLAN

PART VII - DARLINGTON NUCLEAR EMERGENCY PLAN

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PROVINCE OF ONTARIO

NUCLEAR EMERGENCY PLAN

PART VII - DARLINGTON NUCLEAR EMERGENCY PLAN

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GLOSSARY

See Provincial Nuclear Emergency Plan, Part I, Appendix 14

DISTRIBUTION

As per Distribution List, Provincial Nuclear Emergency Plan, Part I

ACRONYMS & ABBREVIATIONS

AECB	- Atomic Energy Control Board
AECL	- Atomic Energy of Canada Limited
BNGS	- Bruce Nuclear Generating Station
BNPD	- Bruce Nuclear Power Development
CANDU	- the name of the Canadian developed nuclear power reactor system (from Canada Deuterium Uranium)
CEPO	- Coordinator, Emergency Planning Ontario
COMSONT	- Communications Ontario (an amateur radio organization)
CRNL	- Chalk River Nuclear Laboratories
DEL	- Derived Emission Limit
DNGS	- Darlington Nuclear Generating Station
DRL	- Derived Release Limit
ECC	- Exposure Control Centre
ECDU	- Exposure Control/Decontamination Unit
EOF	- Emergency Operations Facility
E.P.Ont.	- Emergency Planning Ontario
ExecGroup	- Executive-Advisory Group
FHQ	- Field Headquarters
FNECC	- Federal Nuclear Emergency Control Centre
InfoCentre	- Information Centre
InfoGroup	- Information Group
IMO	- Ingestion Monitoring Organization
IMCG	- Ingestion Monitoring Control Group
JTCC	- Joint Traffic Control Centre

ACRONYMS & ABBREVIATIONS (cont'd)

KI	- Potassium Iodide
km	- Kilometer
LOCA	- Loss-of-Coolant Accident
MCC	- Ministry of Culture and Communications
MCG	- Municipal Control Group
MCSS	- Ministry of Community & Social Services
MDU	- Monitoring & Decontamination Unit
Met	- Meteorology, meteorological
MNR	- Ministry of Natural Resources
MOE	- Ministry of the Environment
MOH	- Ministry of Health
MOL	- Ministry of Labour
MSG	- Ministry of the Solicitor General
MTO	- Ministry of Transportation, Ontario
OH	- Ontario Hydro
OMAF	- Ontario Ministry of Agriculture and Food
OpsCentre	- Operations Centre
OpsGroup	- Operations Group
PAD	- Public Action Directive
PAL	- Protective Action Level
PNGS	- Pickering Nuclear Generating Station
PTAC	- Phase 2 Advisory Committee
PZ	- Primary Zone
rad	- See definition of Absorbed Dose in Glossary, Part I
rem	- See definition of Dose Equivalent in Glossary, Part 1
TechGroup	- Technical Group
Telecom	- Telecommunications
TLD	- Thermoluminescent Dosimeter

CHAPTER 1

GENERAL

1.1 Aim

The aim of Part VII of the Provincial Nuclear Emergency Plan is to prescribe the measures that shall be undertaken to deal with a nuclear emergency caused by the Darlington Nuclear Generating Station (NGS).

1.2 Scope

1.2.1 This plan deals mainly with actions at the Provincial level and shall be supplemented by the appropriate Municipal Plan (see 1.3 below). This plan shall also be read and applied in the context of Part I of the Nuclear Emergency Plan: The Provincial Master Plan.

1.2.2 This Part VII Plan, together with the Part I Provincial Plan, are referred to as "the Provincial Plan" in this document.

1.3 Municipal Plan

1.3.1 The Regional Municipality of Durham is the designated municipality with respect to the Darlington Nuclear Generating Station (Provincial Plan, Part I, Appendix 2).

1.3.2 A municipal plan shall be made by the designated municipality for a Darlington NGS nuclear emergency, as per the Provincial Plan, Part I, Section 1.5. This plan shall cover the offsite emergency response arrangements and activities of the designated municipality, appropriate regional departments, appropriate local boards, and the local police force. This plan is referred to as "the Municipal Plan" in this document.

1.3.3 In this document, the terms "municipal" and "municipality" shall include, unless the context indicates otherwise, the designated municipality (paragraph 1.3.1 above), as well as the regional departments, local boards and local police force whose area of operation includes the area covered by the Municipal Plan.

1.4 Joint Traffic Control Plan

1.4.1 A Joint Traffic Control Plan for the area likely to be affected by a Darlington nuclear emergency shall be made by the police forces with jurisdiction over the area and its road network, with the assistance of the appropriate Ministry of Transportation districts.

1.4.2 This plan shall be designed to meet the requirements of the Provincial and Municipal Plans. For specific guidelines, see Provincial Plan, Part I, Chapter 6.

1.4.3 During an emergency this traffic control plan shall be implemented under the direction of the Provincial Operations Centre.

CHAPTER 2

PLAN DATA AND ORGANIZATION

2.1 Darlington Nuclear Generating Station

2.1.1 Darlington NGS is located in the Town of Newcastle at latitude 43° 52' North and longitude 78° 43' West, on the northern shore of Lake Ontario.

2.1.2 The Darlington nuclear facility contains one generating station with 4 CANDU nuclear reactors, each having a power generating capacity of 935 MWe. It also contains a Tritium Removal Facility. Figure 1 (Page 7) shows a schematic diagram of a CANDU reactor.

2.2 Planning Zones

2.2.1 Contiguous Zone

The Contiguous Zone comprises Response Sectors 1, 2, 3 and 4 (see Figure 2, page 8), and includes an area from Darlington Provincial Park to Port Darlington and extending to the north to Regional Road 22.

The Contiguous Zone is the area immediately surrounding the nuclear facility for which an increased level of emergency planning and preparedness may be advisable, as compared with the rest of the Primary Zone.

2.2.2 Primary Zone

The Primary Zone for Darlington NGS is shown in Figure 2 (page 8). It includes an area of the Region of Durham bounded generally by Wilmot Creek to the east, 4th Concession (Taunton Road) to the north and Cedar Street to the west, but excluding Darlington NGS. The zone extends southwards into Lake Ontario to a radius of 10 km from Darlington NGS. The exact boundaries of the Zone can be determined from Appendix 1 (page 38).

The Primary Zone, which includes the Contiguous Zone, is the area within which it would be prudent to plan and prepare for taking Plume Exposure Control measures, such as sheltering and evacuation.

2.2.3 Secondary Zone

The Secondary Zone encompasses all areas of Durham Region, Metropolitan Toronto, York Region and the Counties of Victoria, Northumberland and Peterborough within a 50 km radius of Darlington NGS. The Secondary Zone is shown in Figure 3 (page 9) and includes both the Contiguous and Primary Zones. Figure 3 also shows the sub-zones and sub-sectors of the Secondary Zone.

The Secondary Zone is the area within which it would be prudent to plan and prepare for taking Ingestion Control measures, such as banning consumption of contaminated food items.

2.3 Response Sectors

2.3.1 The Primary Zone for Darlington NGS is divided into 24 Response Sectors which lie as follows:

(a) Durham Region - Sectors 1-20

(b) Lake Ontario - Sectors 21-24

2.3.2 The boundaries of the Response Sectors are shown in Figure 2 (page 8), and are detailed in Appendix 1 (page 38).

2.4 Planning Data

2.4.1 Population

Estimates are contained in Appendix 2 (page 41).

2.4.2 Institutions

Data on daycare centres, schools, hospitals and senior citizen and nursing homes are contained in Appendix 2 (page 41).

2.4.3 Alerting and Lead Times

These are given for each Response Sector in Appendix 3 (page 42). Also refer to Chapter 3, Section 3.5 (page 14).

2.4.4 Evacuation Data

Estimates of the transportation and the time required for evacuation of each Response Sector are contained in Appendix 4 (page 44).

2.5 Emergency Organization

2.5.1 The emergency management organization for dealing with a Darlington NGS emergency shall be as prescribed in the Provincial Plan, Part I.

2.5.2 The designated municipality shall set up a Municipal Control Group as per Chapter 4 of the Provincial Plan, Part I. Appropriate regional departments, local boards and the local police force shall provide representatives to the Municipal Control Group.

2.5.3 A Joint Traffic Control Centre shall be set up for a Darlington NGS emergency to implement the Joint Traffic Control Plan made under section 1.4 (page 2). It shall be staffed by representatives of the Ontario Provincial Police, Durham Regional Police, York Regional Police and Districts No. 6 and 7 of the Ministry of Transportation.

2.5.4 The following regional/district/area offices of Provincial ministries shall be prepared to respond to the emergency and provide the necessary assistance to the designated municipality, as required by the Provincial Plan (for details, see Appendix 8 of Part I), the Municipal Plan, or as directed by their respective ministries:

(a) Agriculture & Food

Central Region
Durham East District Office
Peterborough District Office

(b) Community & Social Services

Central Region
Toronto Area Office
Peterborough Area Office

(c) Environment

Central Region
Toronto Area Office
Peterborough District Office

(d) Health

Oshawa/Markham District Ambulance Service
Oshawa Central Ambulance Communications Centre

(e) Ministry of Natural Resources

Lindsay District

(f) Solicitor General (Ontario Provincial Police)

No. 5 District, OPP
No. 8 District, OPP

(g) Transportation

District No. 6
District No. 7

2.6 Emergency Facilities

The various emergency centres and facilities required to be established under this plan will be located as shown in Appendix 5 (page 50). These locations have been selected by the municipality and the organizations concerned.

2.7 Telecommunications

2.7.1 The telecommunication links to be established, or which are available for use, in a Darlington NGS emergency are shown in Appendix 6 (page 53).

2.7.2 All organizations and agencies involved in responding to a Darlington NGS nuclear emergency shall ensure that those of their essential telephones which need to make outgoing calls during an emergency are covered by the Line Load Control program.

FIGURE 1 - NUCLEAR GENERATING UNIT SCHEMATIC

CANDU PRESSURIZED HEAVY WATER REACTOR

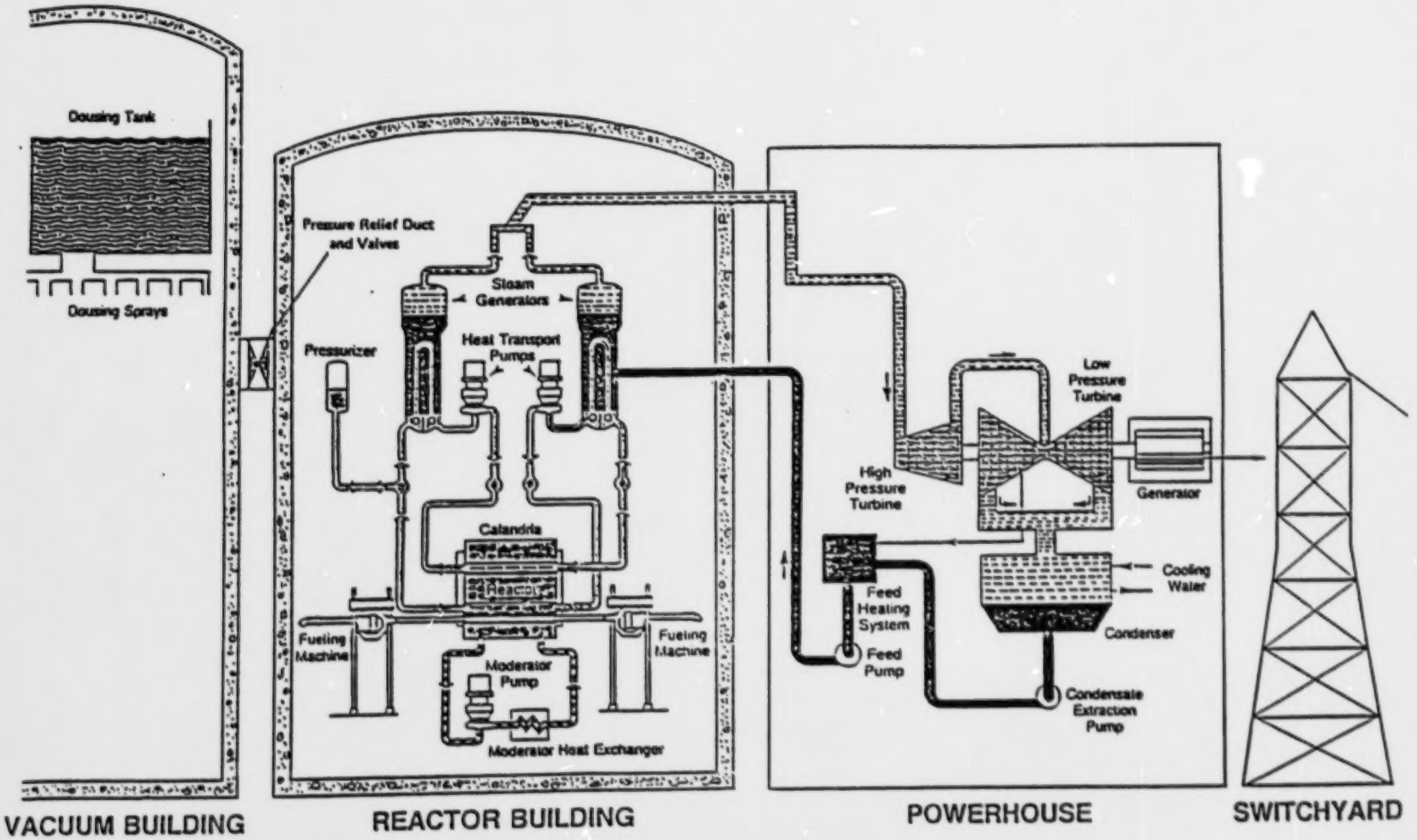


FIG 2 - PRIMARY ZONE AND RESPONSE SECTORS

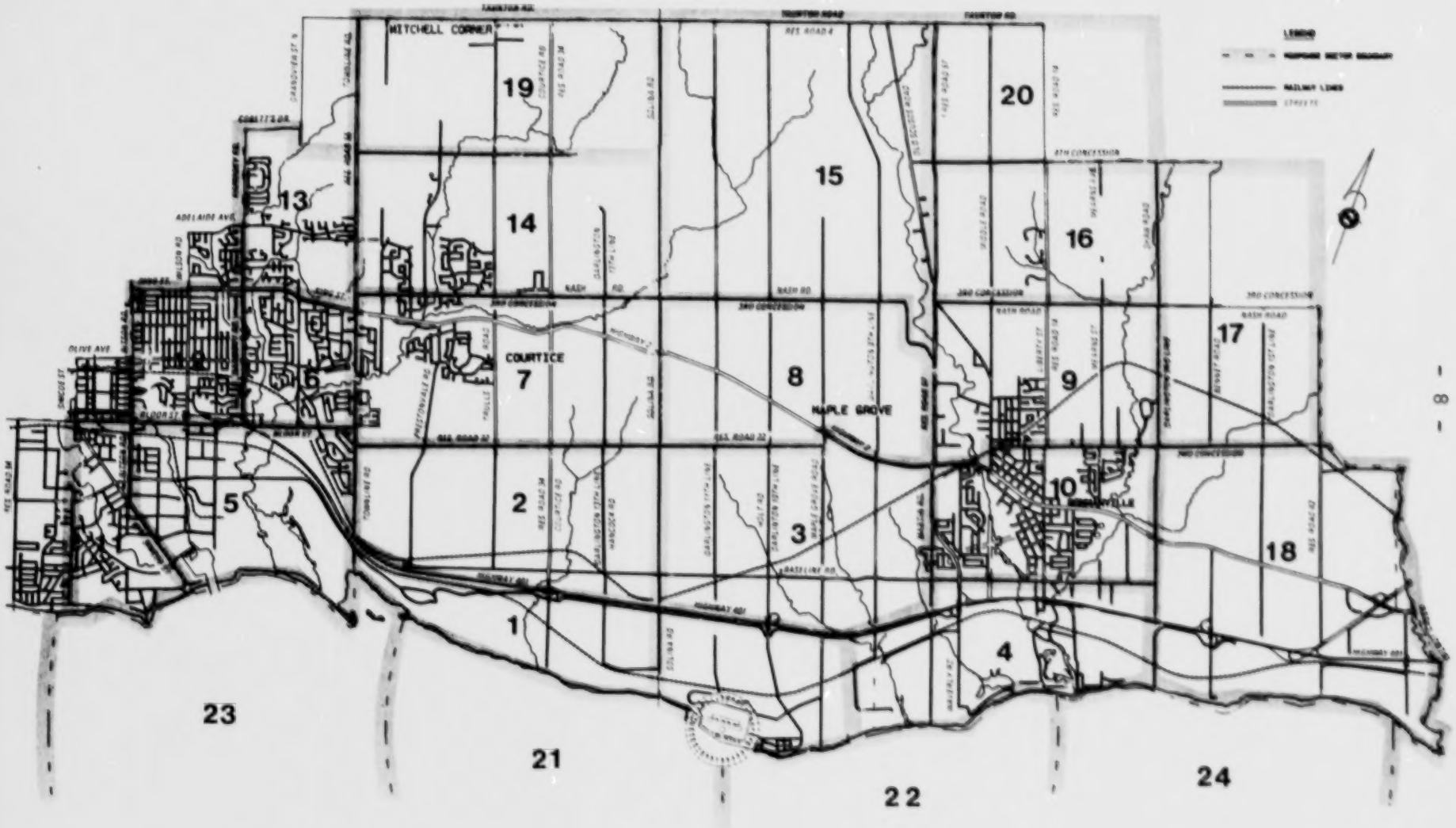
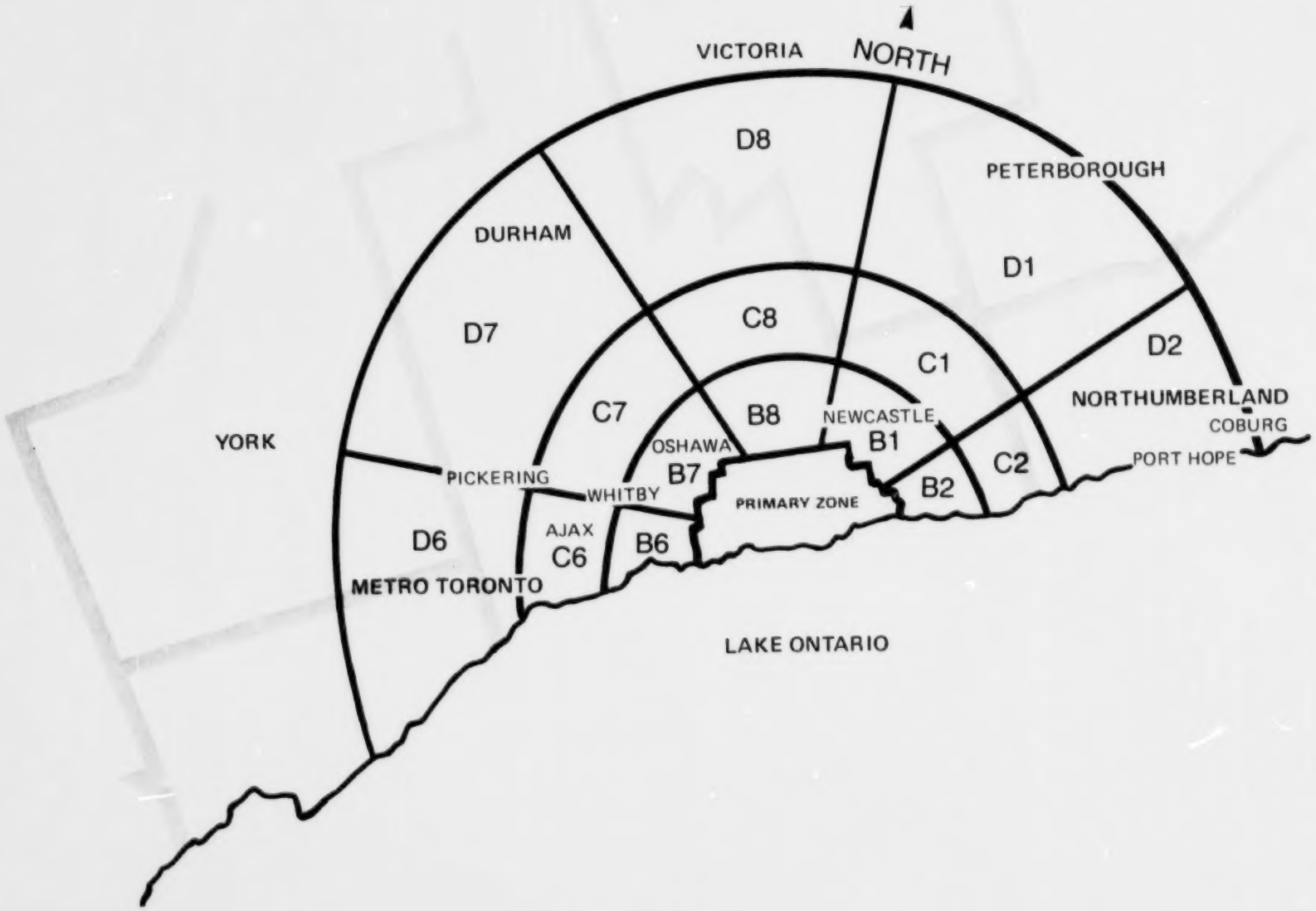


FIG 3 - SECONDARY ZONE AND SUB-SECTORS



CHAPTER 3

NOTIFICATION

3.1 General

3.1.1 This chapter covers the notification system used in the standard case, i.e., a Darlington NGS atmospheric emission, by itself or concurrent with a liquid emission. In such cases it is expected that operations would be conducted so that Phase 1 would precede Phase 2.

3.1.2 However, in certain cases (namely, for a purely liquid emission from Darlington NGS, and for certain transborder accidents) Phase 1 operations would not be required, and the Provincial Plan will be activated for Phase 2 operations only. The notification system described below would not apply in full in such cases. The differences are dealt with in Chapter 6 below (for a purely liquid emission) and in Part VIII of the Provincial Nuclear Emergency Plan (for transborder emergencies).

3.2 Initial Notification

3.2.1 The Darlington NGS Duty Shift Supervisor shall notify the pre-designated contact points in the Provincial and Municipal emergency organizations as soon as conditions arise at the station which require such notification under the criteria contained in Chapter 5 of the Provincial Plan, Part I.

3.2.2 The Shift Supervisor shall assign an appropriate category to the notification, as prescribed in the Provincial Plan, Part I. If at any time after the initial notification the Shift Supervisor concludes that the category has changed, he shall immediately make a notification to this effect to all concerned.

3.2.3 A Category 1 notification shall be made only to the Province, and not to the municipality. In this case, the Coordinator, Emergency Planning Ontario, shall monitor the situation and keep the municipality informed of developments, as appropriate.

3.2.4 The Provincial contact point is prescribed in Annex B to Appendix 7 (page 61). The municipal contact point shall be designated in the Municipal Plan.

3.2.5 The Province may review and, if considered appropriate after consultation with the nuclear facility, revise the notification category assigned by the Shift Supervisor. This revised category shall then be communicated to the municipality and other agencies, and shall supersede the current one.

3.3 Internal Notification and Activation

3.3.1 Provincial

(a) When Darlington NGS initiates an emergency notification, the Coordinator, Emergency Planning Ontario (or, where necessary, alternates) shall decide whether to monitor the situation, place the Provincial emergency organization on standby, or activate it (as per section 6.1 of the Provincial Plan, Part I). In the latter two cases, the internal fan-out notification shall be initiated. The notification message shall include the notification category.

(b) If the plan is placed on standby, the Coordinator shall continue to monitor the situation, obtain technical advice and shall activate the plan when considered appropriate or when a new notification requiring this is received from the plant.

(c) The Provincial fan-out notification procedure and lists are contained in Appendix 7 (page 57). They provide for initiation of the Provincial fan-out, and notification of the Provincial Operations Centre and certain external agencies.

(d) The members of the Phase 2 Advisory Committee shall be notified by the Provincial Operations Centre at an appropriate time towards the end of Phase 1.

(e) The notification procedure for the members of the Provincial Information Centre and the Local Information Centre shall be prescribed in their operating procedures.

(f) The notification procedure for the members of the Ingestion Monitoring Organization (IMO) shall be prescribed in the IMO procedures.

(g) The following ministries and agencies shall issue their own internal notification and activation procedures and lists, which should include their appropriate regional and area/district offices (2.5.4 above):

Ministry of Agriculture & Food
Ministry of Community & Social Services
Ministry of the Environment
Ministry of Health
Ministry of Natural Resources
Ministry of Transportation
Ministry of Culture and Communications
Ontario Provincial Police

(h) All of the above-mentioned notification procedures shall provide for immediate activation of their respective organizations (less the IMO) upon receipt of a Category 3 notification, or upon activation of the Provincial Nuclear Emergency Plan.

(i) The notification lists mentioned in (c) through (g) above shall be updated and, if necessary, re-issued every six months, or more often if appropriate.

3.3.2 <u>Municipal</u>

(a) The Municipal Plan shall prescribe the internal municipal notification and activation procedure. Municipal departments/agencies shall set up their own internal notification and activation procedures. These procedures shall ensure that all elements of the municipal response organization can be expeditiously notified when required. They shall also provide for immediate activation of all plans upon receipt of a Category 3 notification, or upon activation of the Provincial Nuclear Emergency Plan (Note: This

does not apply in the case of a liquid emission [paragraph 6.5.1, page 33], nor in the case of an activation of the Provincial Plan for Phase 2 operations only).

(b) The Municipal Plan shall provide for the placing of the the Municipal emergency organization on standby or its activation depending on the notification message received, as per Table 4.1 (page 24).

3.3.3 Others

Other organizations which are affected and need to notify their members at the onset of a nuclear emergency, shall set up their own internal notification procedures, and shall implement them according to the content of the emergency notification received by them. These procedures **shall provide for immediate activation of emergency plans in case of a Category 3 notification, or when the Provincial Nuclear Emergency Plan is activated** (Note: This does not apply in the case of a liquid emission, nor in the case of an activation of the Provincial Plan for Phase 2 operations only).

3.4 External Notification

3.4.1 The Federal Government, the Province of Quebec, the Canadian Coast Guard, the States of New York, Michigan and Ohio, and the U.S. Coast Guard shall be notified as prescribed in Annex E to Appendix 7 (page 64).

3.4.2 Certain other agencies/organizations, which need to be notified early, shall be so notified by the following, who shall set up in advance the necessary procedures for doing so:

(a) Ministry of Agriculture & Food shall notify:

The Ontario Milk Marketing Board

(b) Ministry of Community & Social Services shall notify:

Red Cross, Ontario Division
St. John Ambulance, Ontario Council

(c) Ministry of Natural Resources shall notify:

Darlington Provincial Park

(d) Ministry of Culture and Communications shall notify:

Bell Canada
CNCP Telecom

(e) Ministry of Transportation shall notify:

National Transportation Agency - Emergency Alert
CN Rail
Air Traffic Control

(f) The Municipal Plan shall provide for the notification of:

Durham Region Board of Education
Durham Region Separate School Board
Northumberland & Newcastle Board of Education
Peterborough-Victoria-Northumberland & Newcastle Roman Catholic Separate School Board
Local utilities (Hydro, Gas, Water)
Local branches of volunteer organizations

(g) The Municipal Plan shall provide for early notification of the Designated Media.

3.5 Public Notification

3.5.1 Notification to the public of the occurrence or imminence of a nuclear emergency (and the need to adopt some protective measure, if necessary) shall be carried out as follows:

(a) Alerting of the public in the Primary Zone by means of sound signals. Messages will also be transmitted to the media from the Ontario Provincial Police News Bureau and the Metropolitan Toronto Police News Bureau. The messages and sound signals would cause the public in the Primary Zone to tune to pre-designated radio/TV stations (as instructed in the public education program).

(b) Broadcast through the Designated Media of an appropriate announcement.

3.5.2 The system to achieve the above public notification shall be prescribed in the Municipal Plan.

3.5.3 Alerting times for sectors, as estimated by Durham Regional Police, are contained in Appendix 3 (page 42). Durham Regional Police shall ensure that the requisite resources are allocated to meet these target times.

CHAPTER 4

OPERATIONS - PHASE 1

4.1 Introduction

4.1.1 Scope

This chapter deals with the emergency response in case of a radioactive emission to the atmosphere, or such an emission combined with a liquid emission. Emergency response in case of a purely liquid emission is dealt with in Chapter 6.

4.1.2 Overview

Operations during Phase 1 are expected to proceed according to the following sequence:

(a) Notifications (Chapter 3).

(b) Appropriate response to the notifications, including, where necessary, activation of plans and the automatic implementation of certain immediate actions (sections 4.2 to 4.5 below).

(c) If appropriate, the implementation of protective measures by the municipality (section 4.6 below).

(d) The Province will declare a Provincial emergency and will assume control of operations (sections 4.7 and 4.8 below).

(e) Upon assuming control, the Province will assess the need for certain initial measures, and will institute those considered necessary (section 4.9 below).

(f) The Province will carry out an ongoing assessment of the situation and will order appropriate protective and operational measures (sections 4.9 and 4.10 below).

(g) At an appropriate time the Province will order the commencement of ingestion monitoring (section 4.11 below).

(h) When the radiation emissions from the nuclear facility have ended, and there is no risk of further uncontrolled emissions, the Province will rescind, as appropriate, the protective measures imposed, and allow or arrange for the return of evacuees, where safe. A smooth transition will be made from Phase 1 to Phase 2 (section 4.12 below).

4.2 Category 1 Notification - Response

A Category 1 notification does not require activation of any emergency plans, and is made only to the Province. The Province will monitor the situation, and keep the municipality apprised as and when appropriate. In the event that the notification category is upgraded, either by the Shift Supervisor or by the Province, a new notification shall be made to the municipality and all others concerned, and action shall be taken as appropriate to that category (see below).

4.3 Category 2 Notification - Response

The normal response to a Category 2 notification shall be the placing of emergency organizations on standby by the Province, the municipality and other agencies, and the setting up of Provincial and Municipal Operations and Information Centres, and Ministry operations rooms. The situation will be continuously monitored by the Province. If conditions at the nuclear facility revert to normal, and no further action is required, the Province will issue a stand-down advisory to all concerned. If, on the other hand, further action is necessary, the Province will activate the Provincial Plan and may, in addition, upgrade the notification category to 3, if appropriate. In either case, all other emergency plans shall be immediately activated, and the appropriate actions implemented (see Table 4.1, page 24).

4.4 Category 3 Notification - Response

Whenever the nuclear facility or the Province makes a Category 3 notification, all emergency plans and organizations shall be immediately activated. Any measures prescribed in the plans as requiring automatic implementation on a Category 3 activation, shall be implemented (see Table 4.1, page 24).

4.5 Immediate Actions

4.5.1 Depending on whether plans are being placed on standby or activated, and the notification category, certain immediate actions shall be taken at the Provincial and municipal levels. These are tabulated in Table 4.1 (page 24).

4.5.2 The Municipal Plan and the plans of all affected ministries, agencies and other organizations shall provide for these immediate actions to be carried out automatically upon receipt of the relevant notification message.

4.6 Protective Measures by Municipality

4.6.1 Protective Measures - Immediate

If there is an ongoing radioactive emission at the time of making the initial notification (3.2.1 above) the Shift Supervisor shall include in the message a recommendation for sheltering in Response Sectors 1, 2, 3 and 4. If, based upon the station situation and prognosis, in his judgement certain additional protective measures are required to be implemented immediately in any sectors of the Primary Zone, or the area for sheltering should include other sectors, the Shift Supervisor shall so recommend in his initial notification message.

The Municipal Plan shall prescribe how such a recommendation is to be dealt with before the MCG is functional, and the official(s) and alternate(s) who shall act upon the recommendation.

4.6.2 Preparatory Measures

The Municipal Control Group, upon assembly following activation of the Municipal Plan, shall consider the following preparatory measures:

(a) Suspension of work

(b) Closing of beaches and recreation areas

(c) Restriction of non-critical hospital admissions

(d) Distribution of KI pills

(e) Stage 2 traffic control

If the Province has not yet assumed operational control, the Municipal Control Group may impose any of these measures in the whole Primary Zone or certain sectors only.

4.6.3 Protective Measures - Later

After the intial notification and before the Province assumes operational control the Station Manager or Shift Supervisor, Darlington NGS, shall recommend to the MCG imposition of any protective measure listed in Table 4.2 (page 27) should that become necessary under the technical criteria prescribed in the Provincial Plan. The Head MCG shall decide on appropriate action on such recommendations, factoring in operational considerations such as weather, readiness of the emergency organization, etc.

Any of these protective measures may also be applied as a precaution at this stage should the Municipal Control Group, after consultation with the Station Manager or Shift Supervisor, Darlington NGS, so decide.

4.7 Declaration of a Provincial Emergency

4.7.1 The Coordinator, Emergency Planning Ontario, shall arrange for the declaration of a Provincial emergency, as provided for in Appendix 5, Provincial Plan, Part I. This should preferably occur prior to the assumption of operational control by the Province.

4.7.2 Normally, the area to be covered initially by a Provincial declaration for a Darlington NGS emergency shall be the Regional Municipality of Durham.

4.8 Provincial Assumption of Control

4.8.1 The Province will assume control of operations through the Provincial Operations Centre when the following requirements are met:

(a) The Provincial Operations Centre and the Provincial Information Centre are ready to function.

(b) The necessary telecommunication links are functional.

4.8.2 Notification of Provincial assumption of control shall be formally made by the Provincial Operations Centre to all concerned, specifying the time at which this control will become effective.

4.8.3 From the time at which Provincial control goes into effect, the following shall apply:

(a) Darlington NGS shall cease to make recommendations or provide information to the Municipal Control Group (MCG). Formal communications shall cease between the nuclear facility and the Ontario Hydro liaison officer at the MCG, and between the nuclear facility and the Local Information Centre.

(b) Directives on protective action shall be issued to the Municipal Control Group from the Provincial Operations Centre. The MCG should complete any protective measure being implemented at the time of takeover, but thereafter no other protective, preparatory, or precautionary measure relating to the nuclear emergency shall be undertaken by the MCG without the direction or concurrence of the Provincial Operations Centre.

4.9 Protective Measures by the Province

4.9.1 Preparatory Measures

The Provincial Operations Centre shall, immediately after assuming operational control, consider the desirability of imposing the following preparatory measures in the whole or part of the Primary Zone:

(a) Suspension of work

(b) Closing of beaches and recreation areas

(c) Restriction of non-critical hospital admissions

(d) Distribution of KI pills

(e) Stage 2 traffic control

The Provincial Operations Centre shall also consider the desirability of imposing, as a precaution, any of the protective measures listed in Table 4.2, page 27, especially entry control.

In case of a serious accident, and particularly in the event of a Category 3 notification, an early precautionary evacuation of Sectors 1, 2, 3 and 4 should be considered.

If it is certain that no radiation risk would be incurred by drivers, the Provincial Operations Centre shall direct the Ministry of Agriculture & Food to arrange for clearance of all dairy farms' milk storages in the Primary Zone.

An assessment shall be made of the need to extend any of the Ingestion Control Measures listed on Table 4.2, (page 27) to areas beyond the Primary Zone.

4.9.2 Protective Measures

Based on a continuous assessment of future projections of how the situation may develop (Chapter 6, Provincial Plan, Part I, refers), the Provincial Operations Centre shall decide on and order appropriate protective measures (Table 4.2, page 27) during the course of Phase 1. These measures shall be implemented by the municipality and other appropriate agencies.

4.9.3 Measures affecting lake sectors shall be communicated to the Canadian Coast Guard for implementation.

4.10 Evacuations

4.10.1 Evacuations, if considered necessary, shall be carried out by Response Sector, according to the outline evacuation plan given in Appendix 4 (page 45).

4.10.2 It is expected that most residents will be able to evacuate under their own arrangements. Vehicles shall be provided, under municipal arrangements, to move those evacuees who are unable to furnish their own transportation.

4.10.3 Ambulances and special vehicles shall be made available, under municipal arrangements, to those residents requiring special transportation.

4.10.4 The municipal plan shall include the arrangements by which residents may obtain such alternate means of transportation.

4.10.5 The smooth and expeditious movement of evacuee traffic shall be the responsibility of the traffic control organization set up under the Joint Traffic Control Plan.

4.10.6 Medical support to any evacuation shall be provided by the local ambulance services and hospitals under municipal arrangements.

4.10.7 The reception and care of evacuees shall be provided for in the municipal plan, which should include letters of agreement executed with host municipalities.

4.10.8 Darlington NGS shall prepare its own plans for the evacuation of onsite personnel in consultation with the Province. However, any evacuation of onsite personnel shall be carried out by the station after giving prior notice of its intention to the Provincial Operations Centre or the Municipal Control Group, whichever is controlling operations, and at timings agreed to with the latter.

4.11 Ingestion Monitoring

At an appropriate stage, the field elements of the Ingestion Monitoring Organization shall be activated by the Provincial Operations Centre. When the situation is considered to have stabilized, the Executive Director, Provincial Operations Centre, shall direct the Ingestion Monitoring Control Group to commence field monitoring for Ingestion Control purposes.

4.12 Transition to Phase 2

The Executive Director, Provincial Operations Centre, shall carry out the relevant provisions of Chapter 6, Provincial Plan, Part I, at the appropriate stage. This will result in the rescinding of the protective measures ordered, including the return of most, if not all, evacuees. The Phase 2 Advisory Committee shall be convened.

4.13 Emergency Worker Safety

4.13.1 At the commencement of an emergency, the Response Sectors in the Primary Zone shall be assumed to carry the following safety status (Provincial Plan, Part I, Chapter 6, refers):

Category 1 or 2 notification

- All sectors	: GREEN

Category 3 notification

- Sectors 1 to 4,21,22	: ORANGE
- Sectors 7 to 10	: YELLOW
- All others	: GREEN

4.13.2 If appropriate, Darlington NGS may recommend changes to the above sector safety status to the Municipal Control Group prior to Provincial assumption of control.

4.13.3 When the Province assumes operational control, the Provincial Operations Centre shall, as early as is feasible, assign a safety status to each Response Sector and inform all concerned. These allocations shall be periodically updated.

4.13.4 The Provincial Operations Centre, the Municipal Control Group and all other affected organizations shall ensure that emergency workers are kept informed of the current sector safety status.

4.13.5 Emergency workers entering sectors assigned a safety status other than GREEN shall first report to an Exposure Control Centre, and shall observe the precautionary measures prescribed by the Centre and in the Provincial Plan, Part I, Appendix 4. The municipality and other affected organizations shall ensure that any such workers can be provided with direct reading dosimeters, KI pills and TLD badges before the Exposure Control Centre becomes functional.

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION

Notification Message	Immediate Actions	
	Provincial	Municipal
"Category 1"	CEPO shall monitor the situation and keep municipality apprised.	No action required unless notification category is upgraded and/or further instructions given by Province.
"Category 2" (excluding a LIQUID EMISSION)	(1) CEPO shall initiate notification placing the Provincial emergency organization on standby. (2) Provincial OpsCentre shall be set up (but not staffed). (3) Provincial InfoCentre shall be set up (but not staffed). (4) Operations rooms for Ministry Emergency Action Groups shall be set up (but not staffed).	(1) Municipal contact point shall initiate notification placing municipal organization on standby. (2) Municipal OpsCentre shall be set up (but not staffed). (3) Local InfoCentre shall be set up (but not staffed).

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION (cont'd)

Notification Message	Immediate Actions	
	Provincial	**Municipal**
"Provincial Nuclear Emergency Plan is to be activated" (following a Category 2 notification)	(1) CEPO initiates appropriate notification. (2) Provincial OpsCentre shall be set up and staffed. (3) Provincial InfoCentre shall be set up and staffed. (4) Ministry Emergency Action groups shall assemble in their operations rooms. (5) The field elements of the Ingestion Monitoring Organization shall be placed on standby. (6) The Traffic Control Plan shall be activated and Stage 1 shall be automatically implemented.	(1) Head, Municipal Control Group, shall initiate notification activating municipal plan. (2) Head, Municipal Control Group, shall initiate notification of the public (3.5 above). (3) Municipal OpsCentre and Local InfoCentre shall be set up and staffed. (4) Reception Centres, Exposure Control Centres and at least one Evacuee Centre for each Reception Centre shall be set up and staffed. (5) Emergency organizations of appropriate municipal departments shall be activated. (6) A municipal emergency shall be declared.

TABLE 4.1 - IMMEDIATE ACTIONS IN RESPONSE TO NOTIFICATION (cont'd)

Notification Message	Immediate Actions	
	Provincial	**Municipal**
"Category 3" (excluding a LIQUID EMISSION)	(1) CEPO shall initiate notification activating the Provincial Plan. (2) All the actions listed at (2) to (6) above shall be carried out. (3) Canadian Coast Guard shall broadcast a warning for marine craft to remain clear of sectors 21 through 24. (4) MTO shall notify Air Traffic Control to direct aircraft to avoid flying over the Primary Zone. (5) MTO shall advise CN Rail to remove and keep all rail traffic out of Sectors 1,2,3 and 4 of the Primary Zone. CN Rail shall notify the Provincial Operations Centre, through MTO, if any train was passing through these sectors at, or shortly before, the time of notification, and seek instructions regarding it. (6) The Joint Traffic Control Centre shall implement Stage 2 of the Traffic Control Plan. (7) Ministry of Natural Resources shall evacuate and close Darlington Provincial Park.	(1) Municipal contact point shall initiate notification activating municipal plan. (2) Head, Municipal Control Group, shall initiate notification of the public (3.5 above) (3) Municipal OpsCentre and Local InfoCentre shall be set up and staffed. (4) Reception Centres, Exposure Control Centres and at least one Evacuee Centre for each Reception Centre shall be set up and staffed. (5) Emergency organizations of appropriate municipal departments shall be activated. (6) A municipal emergency shall be declared.

TABLE 4.2 - PROTECTIVE MEASURES

EXPOSURE CONTROL MEASURES	INGESTION CONTROL MEASURES
1. Entry Control[1]	1. Milk Control
2. Sheltering	2. Water Control[2]
3. Evacuation	3. Pasture Control
4. Ingestion of Potassium Iodide (KI)	4. Produce and Crop Control
	5. Livestock Control
	6. Food Control
	*7. Land Control
	*8. Decontamination

* Only applicable to long term restoration.

NOTES

1. Entry Control: The specific measures are indicated in Table 4.1, Provincial items (3) to (5) - Category 3 notification (page 26).

2. Water Control: The following water supply plants in or near the Primary Zone may need early attention:

Oshawa	Bowmanville
Newcastle	Whitby
Ajax	

CHAPTER 5

OPERATIONS - PHASE 2

5.1 General

5.1.1 Phase 2 operations will normally follow Phase 1 operations. However, in certain cases the Provincial Plan may be activated for Phase 2 operations only (namely, in the case of a purely liquid emission and for most transborder accidents). The general conduct of Phase 2 operations will be the same in all circumstances, though details will vary depending on whether Phase 2 operations follow Phase 1, or whether the problem is a liquid emission or a transborder accident.

5.1.2 This chapter covers Phase 2 operations following Phase 1. Phase 2 operations in the case of a liquid emission are covered in Chapter 6 below. Phase 2 operations for a transborder emergency are dealt with in the Provincial Plan, Part VIII.

5.2 Overview

5.2.1 During Phase 2 the main activity will be:

(a) Ingestion Control operations (monitoring of the food chain and water supplies for possible radioactive contamination, and taking appropriate measures if any is found. These measures are listed in Table 4.2, page 27).

(b) Restoration operations (measures to restore conditions to normal, including assessment and payment of compensation for losses, if any).

5.2.2 The Provincial organization for Phase 2 operations is shown in Figure 8 of the Provincial Plan, Part I.

5.2.3 The normal municipal organization should be able to handle Phase 2 operations within the municipality. If considered desirable, the Municipal Control Group may continue into Phase 2.

5.3 Area of Operations

Phase 2 operations may extend to the outer limits of the Secondary Zone (see Figure 3, page 9), but are likely to be confined only to those areas of the zone subjected to the plume during Phase 1. Some of the following municipalities may be involved in Phase 2 operations:

(a) Durham Region

(b) Metropolitan Toronto
City of Scarborough

(c) York Region
Towns of Stouffville, Markham and Richmond Hill

(d) Victoria County
Townships of Manvers, Mariposa, and Emily, and Village of Omemee

(e) Northumberland County
Towns of Port Hope and Cobourg

(f) Peterborough County
Village of Millbrook, Townships of North Monaghan and South Monaghan

5.4 Field Monitoring

During Phase 2, field monitoring shall be carried out as follows:

(a) The field elements of the Ingestion Monitoring Organization shall carry out ingestion monitoring in the Secondary Zone.

(b) Ingestion monitoring throughout the province shall be carried out by implementation of the plan for General Province-wide Monitoring (Provincial Plan, Part I, refers).

(c) Monitoring teams provided by Ontario Hydro shall carry out field monitoring for restoration purposes.

These monitoring operations may be supplemented by the use of other monitoring resources that may become available.

5.5 Ingestion Control Operations

Based upon the results of field monitoring, the Phase 2 Advisory Committee (Provincial Plan, Part I, Chapter 4, refers) shall advise the Executive Authority on the Ingestion Control measures (Table 4.2, page 27) that may be necessary.

Appropriate instructions shall be issued by the Provincial Operations Centre to ministries, municipalities and other organizations, who shall implement them.

5.6 Restoration Operations

Under direction of the Executive Authority, advised by the Phase 2 Advisory Committee, an overall restoration plan shall be developed and communicated to all concerned. This will include, among other things, the return of evacuees not permitted to go back to their homes before the end of Phase 1, the housing of those evacuees who cannot be allowed back for some time, assessment and compensation arrangements, etc.

5.7 Municipal Restoration Operations

Under the overall plan developed by the Province, each municipality affected by the emergency shall formulate a restoration plan, and take all necessary measures to restore conditions to normal within its area.

5.8 Emergency Worker Safety

5.8.1 Based upon the results of field monitoring and dose projections, the Head, Technical Group shall periodically allocate safety status to sub-sectors or areas of the Secondary Zone, according to the guidelines prescribed in the Provincial Plan, Part I, Appendix 4. These will be communicated by the Provincial Operations Centre to all organizations involved in Phase 2 operations.

5.8.2 Emergency workers shall observe the precautions prescribed in the Provincial Plan, Part I, Appendix 4 according to the safety status assigned. If necessary, the Exposure Control Centres already established shall continue to function into Phase 2, and new ones may be set up to cover other areas.

5.9 Termination of Emergency

5.9.1 When the Phase 2 Advisory Committee has completed its tasks, it will be disbanded by the Executive Authority.

5.9.2 When considered appropriate, the Provincial emergency will be terminated.

CHAPTER 6

OPERATIONS - LIQUID EMISSION

6.1 General

In case of a purely liquid emission (i.e., a release of radioactive liquid from Darlington NGS or the Tritium Removal Facility into Lake Ontario), the general response would be in the form of Phase 2 operations, as described in Chapter 5. The initial response to such an emergency would differ from that detailed in Chapter 4, and is dealt with below.

6.2 Notification and Response

6.2.1 Initial Notification

The initial notification from Darlington NGS shall be made under the criteria prescribed in the Provincial Plan, Part I, Chapter 5, and in the same manner as for an airborne emission (see 3.2 above). The keywords "LIQUID EMISSION" shall be included in the notification message.

6.2.2 Category 1 and 2 Notifications - Response

If the notification of a liquid emission has attached to it a Category 1 or 2, the situation will be monitored and assessed, and, if and when appropriate, the Coordinator, Emergency Planning Ontario, shall place the Phase 2 organization on standby, or activate the Provincial Nuclear Emergency Plan for Phase 2 operations (section 6.3 below).

6.2.3 Category 3 Notification - Response

In case a Category 3 notification of a liquid emission is made by Darlington NGS, the Coordinator, Emergency Planning Ontario, shall immediately activate the Provincial Nuclear Emergency Plan for Phase 2 operations (section 6.3 below).

6.3 Activation for Phase 2 Operations

When the Provincial Nuclear Emergency Plan is to be activated for Phase 2 operations only, a notification to this effect shall be made to all concerned, including the following:

(a) The Provincial Phase 2 organization (5.2.2 above).

(b) Ministry of the Environment

(c) Municipalities likely to be affected

(d) The Federal Government

(e) Canadian Coast Guard

(f) The State of New York

(g) U.S. Coast Guard (through Canadian Coast Guard)

6.4 Response - Provincial: Phase 2

The notification message to the different elements of this organization shall specify whether they are to remain on standby or be activated. In the latter case, the following actions shall be taken:

(a) The Ingestion Monitoring Control Group (IMCG) and the Technical Group shall assemble at the Provincial Operations Centre, and commence planning for ingestion monitoring. They shall receive direction from the Coordinator, Emergency Planning Ontario, and technical guidance from the Head, Technical Group.

(b) The Ingestion Monitoring Organization field elements shall assemble at their assigned rendezvous, and commence monitoring as and when directed by the IMCG.

(c) The Phase 2 Advisory Committee shall meet at the Provincial Operations Centre at a time to be designated by the Coordinator, Emergency Planning Ontario.

(d) An Operations Group component (consisting of the Head/Deputy Head, the two Operations Staff Officers and the Administrative Officer) shall assume responsibility for running the Operations Centre, including its telecommunications. Additional support staff shall be called in, as required. The Operations Group may be activated later (see 6.6.4 below).

(e) If notified, the Information Group shall report to the Provincial Operations Centre, and the Provincial Information Centre staff shall set up that centre (see 6.7 below).

(f) The Solicitor General of Ontario shall assume the functions of the Executive Authority.

6.5 Response - Municipal

6.5.1 In the case of a liquid emission notification, the municipal plan shall not be activated, unless specifically so ordered by the Coordinator, Emergency Planning Ontario. This applies even in the case of a Category 3 notification of a liquid emission, or the activation of the Provincial Plan for Phase 2 operations.

6.5.2 The municipality may be directed by the Province to convene the Municipal Control Group, if that is considered appropriate.

6.5.3 The municipality shall implement any measures ordered by the Province to deal with the situation.

6.6 Operations

6.6.1 Immediate Actions

In case of a Category 3 activation, or whenever deemed appropriate under a Category 2 activation, the Coordinator, Emergency Planning Ontario, shall immediately consider the following measures and, taking into account technical advice, implement those considered appropriate:

(a) Entry control into lake sectors.

(b) Closing beaches in the affected area.

(c) Banning swimming, fishing, and the consumption of fish caught in Sectors 21 through 24.

(d) Closing intakes and commencing testing for radioactivity at any or all of the following water supply plants, under arrangements of the Ministry of the Environment:

Oshawa	Bowmanville
Ajax	Whitby
Newcastle	

6.6.2 **Provincial Emergency**

The Coordinator, Emergency Planning Ontario, shall examine the need for declaration of a Provincial emergency, and shall arrange for such a declaration if considered appropriate.

6.6.3 **Phase 2 Operations**

These shall be carried out as outlined in Chapter 5 above.

6.6.4 **Implementation**

The Operations Group of the Provincial Operations Centre, or part of it, may be activated to plan, organize and ensure implementation of the measures to be imposed.

6.7 **Emergency Information**

When activating the Provincial Plan, the Coordinator, Emergency Planning Ontario, shall consult with the Director of Emergency Information and decide upon the most appropriate organizational structure to handle the emergency information operation. If considered desirable, the Information Group of the Provincial Operations Centre and the Provincial Information Centre may be activated.

CHAPTER 7

EMERGENCY INFORMATION AND PUBLIC DIRECTION

7.1 Scope

This chapter deals mainly with the provision of information and direction to the public in the Primary Zone. The provision of information to the general media and the general public is covered in the Provincial Plan, Part I.

7.2 Designated Media

Prior arrangements shall be made by the Region of Durham with the media organizations (the Designated Media) which are to be used for communicating directions and information to the Primary Zone population.

7.3 Local Information Centre

7.3.1 The Local Information Centre is a joint facility of the Province, the local municipality and the utility. Prior to the Province assuming operational control, the Centre shall function under the general direction of the Head, Municipal Control Group. Once the Province takes over control, policy and general direction shall be prescribed by the Director of Information at the Provincial Operations Centre.

7.3.2 The organization of the Local Information Centre is given in the Provincial Plan, Part I, Chapter 4.

7.3.3 The Centre shall perform the following functions:

(a) Convey, through the Designated Media, announcements and directives to the public concerning protective measures to be taken by them (see 7.6 below).

(b) Issue news releases to the local media and provide briefings to the media representatives present at the centre on the provincial, municipal and utility response to the emergency.

(c) Keep the MCG and the Provincial Operations Centre informed on media and public perceptions and reactions, and recommend any remedial action necessary.

(d) Provide information to the Provincial Information Centre on local developments and measures.

(e) Assist journalists working in the area.

7.4 Provincial Assumption of Control

As soon as the Province assumes control of operations, the Provincial Operations Centre shall assume control of the emergency information operation while the Provincial Information Centre shall become the primary agency for the issue of general emergency information. The Local Information Centre shall continue its main information function of providing local information and issuing public action directives.

7.5 Public Action Directives (PADs)

7.5.1 These directives are instructions to the public to take some appropriate preparatory or protective measure. They are broadcast by the Designated Media when so required under a pre-arranged system, which is detailed in the PAD Manual. These prior arrangements include pre-scripted and, where possible, pre-recorded messages for each possible measure. In the latter case, the appropriate tape is played, preceded by an announcement of the area to which the measure applies.

7.5.2 If any measure is to be implemented before the Local Information Centre is functioning, the Head, Municipal Control Group (MCG) shall issue the necessary instructions direct to the Designated Media to broadcast the appropriate PAD.

7.5.3 Once the Local Information Centre is operational, the Head MCG shall direct it to have the appropriate PADs broadcast by the Designated Media.

7.5.4 In the case of any announcement or directive not pre-scripted or pre-recorded, it shall be drafted by the Local Information Centre and transmitted, preferably as hard copy, to the Designated Media.

7.5.5 The Local Information Centre shall monitor the PADs as broadcast by the Designated Media, and shall ensure that they are being correctly transmitted to the public. It shall then confirm this fact to the Head MCG.

RESPONSE SECTOR BOUNDARIES

Appendix 1
(Ref: Section 2.3)

(also see Figure 2, page 7)

SECTOR	SECTOR BOUNDARY (north; east; south; west)
1	South boundary of Highway 401; Solina Road/Regional Road #56 (DNGS boundary); Shoreline of Lake Ontario; Townline Road South (Regional Road #55).
2	Regional Road 22; Solina Road/Regional Road #56 (DNGS boundary); Highway 401; Townline Road South (Regional Road #55).
3	Regional Road 22, Maplegrove Road, Highway 2 (Regional Road #22); Martin Road (Regional Road #57); Highway 401; Solina Road/Regional Road #56 (DNGS boundary).
4	South boundary of Highway 401, Martin Road (Regional Road #57) & Baseline Road; Darlington 3rd line; Shoreline of Lake Ontario; Symons Road (DNGS boundary).
5	Bloor Street; Townline Road South (Regional Road #55); Shoreline of Lake Ontario; Simcoe Street, Ritson Road.
6	King Street(Highway #2); Townline Road (Regional Road #55); Bloor Street; Harmony Road.
7	Nash Road (3rd Concession); Solina Road (Regional Road #56); Regional Road 22; Townline Road (Regional Road #55).
8	Nash Road (3rd Concession); Regional Road 57; Highway 2, Maplegrove Road, Regional Road 22; Solina Road (Regional Road #56).
9	Nash Road (3rd Concession); Darlington 3rd Line; Darlington 2nd Concession, Scugog St., Highway 2; Regional Road 57.
10	Highway 2, Scugog St., Darlington 2nd Concession; Darlington 3rd Line; Baseline Rd.; Martin Road (Regional Road #57).

RESPONSE SECTOR BOUNDARIES (Cont'd)

(also see Figure 2, page 7)

SECTOR	SECTOR BOUNDARY (north; east; south; west)
11	Bloor Street; Ritson Rd., Simcoe St.; Shoreline of Lake Ontario; Cedar St.
12	King Street (Highway #2); Harmony Road; Bloor Street; Ritson Road.
13	Corbett's Dr., south Boundary of Harmony Valley Park; Townline Road (Regional Road #55); King Street (Highway #2); Harmony Road.
14	Pebblestone Road; Solina Road; Nash Road (3rd Concession); Townline Road (Regional Road #55).
15	Taunton Road (Regional Road #4); Regional Road #57; Nash Road (3rd Concession); Solina Road (Regional Road #56).
16	4th Concession Darlington; Shaw Road; Nash Road (3rd Concession); Regional Road #57.
17	4th Concession Darlington; Regional Road 42; 2nd Concession Darlington; Shaw Road.
18	2nd Concession Darlington; Wilmot Creek; Shoreline of Lake Ontario; Darlington 3rd Line.
19	Taunton Road (Regional Road #4); Solina Road (Regional Road #56); Pebblestone Road.; Townline Road (Regional Road #55).

RESPONSE SECTOR BOUNDARIES (Cont'd)

(also see Figure 2, page 7)

SECTOR	SECTOR BOUNDARY (north; east; south; west)
20	Taunton Road (Regional Road #4); Stevens Road; Darlington 4th Concession; Regional Road #57.
21	Shoreline of Lake Ontario; 160° line from DNGS; 5 km arc from DNGS.
22	Shoreline of Lake Ontario; 5 km arc from DNGS; 160° line from DNGS.
23	5 km arc from DNGS; 160° line from DNGS; 10 km arc from DNGS; shoreline of Lake Ontario.
24	Shoreline of Lake Ontario; 10 km arc from DNGS; 160° line from DNGS; 5 km arc from DNGS.

APPENDIX 2
(Ref: Section 2.4)

PLANNING DATA

SECTOR	POPULATION	DAYCARE & NURSERY SCHOOLS*	SCHOOLS		HOSP-ITAL	SR. CITIZEN & NURSING HOMES
			#	Enrolment		
1	57					
2	591		1	404		
3	1217					
4	314					
5	2874	3	2	283		
6	8137	5	4	1185		
7	2711		2	1032		
8	1085		1	120		1
9	2572	1	3	459		
10	10889	2	9	3873	1	4
11	10254	5	6	2152		
12	8840		8	3297		
13	5216		4	2173		
14	3084		2	548		
15	990					
16	465					
17	1200					
18	790					
19	1100		1	86		
20	600					
	62,986	16	43	15,392	1	5

* Private day care is not accounted for in this data.

APPENDIX 3
(Ref: Section 2.4)

ALERTING AND LEAD TIMES

SECTOR	ALERTING[1] TIME		LEAD TIMES[2]					
			SHELTERING[3]		EVACUATION			
					Normal Conditions[4]		Reduced Visibility[5]	
	Hrs.	Min.	Hrs.	Min.	Hrs.	Min.	Hrs.	Min.
1	0	20	1	20	1	40	1	50
2	0	40	1	40	2	00	2	10
3	0	40	1	40	2	00	2	20
4	0	40	1	40	1	50	2	00
5	1	00	2	00	2	10	2	30
6	1	10	2	10	3	20	4	20
7	1	10	2	10	3	00	3	40
8	0	40	1	40	2	00	2	10
9	0	50	1	50	2	50	3	30
10	1	50	2	50	4	50	6	30
11	1	60	2	60	3	10	3	50
12	1	50	2	50	3	40	4	40
13	1	00	2	00	2	40	3	10
14	1	20	2	10	2	20	2	40
15	0	40	1	40	2	10	2	40
16	0	30	1	30	2	00	2	10
17	0	40	1	40	2	20	2	40
18	0	60	1	60	1	40	1	50
19	0	40	1	40	1	50	2	00
20	0	30	1	30	1	50	2	10
21	Lake							
22	Lake							
23	Lake							
24	Lake							

Notes - See page 43

NOTES TO APPENDIX 3

1. Alerting times are derived from "Zone Notification - Darlington Nuclear Facility" - Durham Regional Police Force Study, 1988 (rounded off to nearest 10 minutes).

2. Lead times represent the total time required to complete a protective action.

3. Sheltering lead time:
   The time required to make and transmit decisions (1 hour)
   + alerting time.

4. Evacuation lead time:
   The time required to make and transmit decisions (1 hour)
   + evacuation time (see Appendix 4).

5. Evacuation lead time in conditions of reduced visibility:

   The time required to make and transmit decisions (1 hour)
   + evacuation time with a factor for reduced visibility conditions (see Appendix 4).

6. Evacuation lead times are rounded off to the nearest 10 minutes.

APPENDIX 4
(Ref: Section 2.4)

EVACUATION - OUTLINE PLAN AND TIMES

SECTOR	TRANSPORTATION		RECEPTION CENTRE	MAIN EVACUATION ROUTE(S)	EVACUATION TIMES			
					NORMAL CONDITIONS		REDUCED VISIBILITY	
	Cars	Buses*			Hrs.	Min.	Hrs.	Min.
1	20		Iroquois Park	Courtice Rd (N)/Hwy #401 (W)/Brock Street (Hwy. #12) (S)	0	40	0	50
2	202	(6) 1	Durham College	Taunton Road (W)/Simcoe Street (N)	1	00	1	10
3	424	1	Clarke High School	Highway #2 (E)/Highway #35/115 (N)	1	00	1	20
4	109	1	Clarke High School	Hwy #401 (E)/Highway #35/115 (N)	0	50	1	00
5	1000	(4) 2	Iroquois Park	Hwy #401 (W)/Brock St. (Hwy #12) (S)	1	10	1	30
6	2833	(21) 7	Durham College	Bond Street (W)/Simcoe St. (N)	2	20	3	20
7	944	(16) 2	Durham College	Taunton Road(W)/Simcoe Street (N)	2	00	2	40

* Buses indicated by ( ) represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the estimated number of people requiring bus transport from the sectors.

APPENDIX 4
(Ref: Section 2.4)

EVACUATION - OUTLINE PLAN AND TIMES (CONT'D)

SECTOR	TRANSPORTATION			RECEPTION CENTRE	MAIN EVACUATION ROUTE(S)	EVACUATION TIMES			
						NORMAL CONDITIONS		REDUCED VISIBILITY	
	Cars	Buses*				Hrs.	Min.	Hrs.	Min.
8	378	(2)	2	Clarke High School	Highway #2 (E)/Highway #35/115 (N)	1	00	1	10
9	896	(7)	2	Clarke High School	Highway #2 (E)/Highway #35/115 (N)	1	50	2	20
10	3791	(61)	13	Clarke High School	Highway #2 (E)/Highway #35/115 (N) or Highway #401 (E)/Highway #35/115 (N)	3	50	5	30
11	3570	(36)	8	Iroquois Park	Hwy #401 (W)/Brock St. (Hwy #12) (S)	2	00	2	50
12	3077	(52)	7	Iroquois Park	Hwy #401 (W)/Brock St. (Hwy #12) (S)	2	40	3	40
13	1816	(34)	4	Durham College	Taunton Road (W)/Simcoe Street (N)	1	10	2	10
14	1074	(9)	3	Durham College	Conlin's Road (W)/Simcoe Street (S)	1	20	1	40
15	345		1	Orono Arena	Taunton Road (E)/Regional Road #17 (S)	1	10	1	30
16	163		1	Orono Arena	Taunton Road (E)/Regional Road #17 (S)	0	50	1	00

* Buses indicated by ( ) represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the estimated number of people requiring bus transport from the sectors.

APPENDIX 4
(Ref: Section 2.4)

EVACUATION - OUTLINE PLAN AND TIMES (CONT'D)

SECTOR	TRANSPORTATION		RECEPTION CENTRE	MAIN EVACUATION ROUTE(S)	EVACUATION TIMES			
					NORMAL CONDITIONS		REDUCED VISIBILITY	
	Cars	Buses*			Hrs.	Min.	Hrs.	Min.
17	417	1	Orono Arena	Taunton Rd (E)/Regional Rd #17 (S)	1	20	1	40
18	276	1	Clarke High School	Hwy #2 (E)/Highway #35/115 (N) or Hwy #401 (E)/Hwy #35/115 (N)	0	50	1	00
19	384	(1) 1	Durham College	Conlin's Road (W)/Simcoe Street (S)	0	50	1	00
20	209	1	Orono Arena	Taunton Road (E)/Regional Road #17 (S)	1	00	1	10
DNGS Ops	210		Iroquois Park	Hwy 401 (West)/Brock St. (Hwy #12) (S)	1	00	1	10
	90		Clarke High School	Hwy 401 (East)/Hwy #35/115 (N)	0	50	1	00
DNGS Const phase	1202	20	Iroquois Park	Hwy 401 (West)/Brock St. (Hwy #12) (S)	1	50	2	30
	524		Clarke High School	Hwy 401 (East)/Hwy #35/115 (N)	1	10	1	50

* Buses indicated by ( ) represent buses that will evacuate students from school. These buses will not be needed when schools are closed. The other buses represent the estimated number of people requiring bus transport from the sectors.

EVACUATION - OUTLINE PLAN AND TIMES (CONT'D)

GROUPS OF SECTORS	TRANSPORTATION		MAIN EVACUATION ROUTE(S)	EVACUATION TIMES			
				NORMAL CONDITIONS		REDUCED VISIBILITY	
	Cars	Buses		Hrs.	Min.	Hrs.	Min.
1,2,3,4	755	9	a) Hwy #401 (W)/Brock St. (Hwy #2) (S) b) Taunton Rd. (W)/Simcoe St. (N) c) Hwy #2 (E)/Hwy #35/115 (N) d) Hwy #401 (E)/Hwy #35/115 (N)	1	00	1	20
1,2,5,6, 11,12,13	12518	182	a) Hwy #401 (W)/Brock St. (Hwy #2) (S) b) Taunton Rd. (W)/Simcoe St. (N) c) Bond St. (W)/Simcoe St. (N)	4	10	6	00
1,2,6,7, 12,13,14,19	10350	164	a) Hwy #401 (W)/Brock St. (Hwy#2) (S) b) Taunton Rd. (W)/Simcoe St. (N) c) Bond St. (W)/Simcoe St. (N) d) Conlin's Rd. (W)/Simcoe St. (S)	2	50	4	00
1,2,3,7,8, 13,14,15,19	5587	83	a) Courtice St. (N)/Hwy #401 (W) b) Taunton Rd. (W)/Simcoe St. (N) c) Conlin's Rd. (N)/Simcoe St. (S) d) Taunton Rd. (E)/Simcoe St. (S) e) Hwy #2 (E)/Hwy #35/115 (N)	5	30	8	00
2,3,7,8, 14,15,19	3751	45	a) Taunton Rd (W)/Simcoe St. (N) b) Hwy #2 (E)/Hwy #35/115 (N) c) Taunton Rd. (E)/Regional Rd #17 (S) d) Conlin's Rd. (W)/Simcoe St. (S)	2	20	3	50
3,8,9,15, 16,20	2415	17	a) Hwy #2 (E)/Hwy #35/115 (N) b) Taunton Rd. (E)/Regional Rd #17 (S)	2	30	4	10

APPENDIX 4
(Ref: Section 2.4)

EVACUATION - OUTLINE PLAN AND TIMES (CONT'D)

GROUPS OF SECTORS	TRANSPORTATION		MAIN EVACUATION ROUTE(S)	EVACUATION TIMES			
				NORMAL CONDITIONS		REDUCED VISIBILITY	
	CARS	BUSES		Hrs.	Min.	Hrs.	Min.
3,9,10,16 17,20	5900	87	a) Hwy #2 (E)/Hwy #35/115 (N) b) Hwy #401 (E)/Hwy #35/115 (N) c) Taunton Rd (E)/Regional Rd #17 (S)	4	00	5	50
3,4,9,10 17,18	5193	87	a) Hwy #2 (E)/Hwy #35/115 (N) b) Hwy #401 (E)/Hwy #35/115 (N) c) Taunton Rd (E)/Regional Rd. #17 (S)	4	30	6	30

Notes - See page 49

NOTES TO APPENDIX 4

1. Evacuation time is the period from the time the evacuation order is given by the Municipal Control Group, to the time the last vehicle clears the Primary Zone boundary:

   Preparation time (30 minutes)
   + time to clear the sector.

2. Evacuation times are estimated under normal conditions and conditions of reduced visibility. Normal conditions assume:

   (i) fair weather
   (ii) a fully mobilized emergency organization
   (iii) no traffic obstruction

3. Reduced visibility assumes an additional 50% time factor added to the time it takes for the last vehicle to clear the sector under normal conditions to allow for adverse weather conditions such as heavy rain, snow, fog etc.

4. Evacuation times are estimated for non-essential personnel at Darlington NGS during the construction and operations phases. Estimates are based on population data from Ontario Hydro.

5. Evacuation times are rounded off to the nearest ten minutes.

APPENDIX 5
(Ref. Section 2.6)

EMERGENCY FACILITIES - LOCATIONS

1. Provincial Operations Centre : OPP General Headquarters
   90 Harbour Street
   Toronto

2. Provincial Information Centre: 700 University Avenue
   Toronto

3. Emergency Action Group OMAF : 6th Floor
   801 Bay Street
   Toronto

4. Emergency Action Group MCSS : 6th Floor
   Hepburn Block
   80 Grosvenor St.
   Toronto

5. Emergency Action Group MTO : Communications Centre
   East Building
   1201 Wilson Avenue
   Downsview

6. Radiation Laboratory : MOL Radiation Protection
   Laboratory
   81 Resources Road
   Weston

7. Field Headquarters IMO

   Site A : Whitby Municipal Building
   575 Rossland Road East
   Whitby

   Site B : 25 Div. Durham Regional Police
   No. 2 Highway
   Pickering

   Site C : Metro Works Easterly
   Filtration Plant
   Copperfield Road
   Scarborough

8. Municipal Operations Centre : 18 Division HQ
Durham Regional Police
650 Rossland Road East
Whitby

9. Joint Traffic Control Centre : 18 Division HQ
Durham Regional Police
650 Rossland Road East
Whitby

10. Local Information Centre : Durham Regional Building
605 Rossland Road East
Whitby

11. Combined Reception/Evacuee Centres

RCEC#1 : Durham College
2000 Simcoe St. North
Oshawa

RCEC#2 : Clarke High School
Highway 115
Newcastle

RCEC#3 : Orono Arena
Highway #115
Village of Orono

12. Reception Centre

RC#1 : Iroquois Park
Victoria and Henry Street
Whitby

13. Evacuee Centres

EC#1 : Port Perry High School
160 Rosa Street
Port Perry

EC#2 : L.C.V.I
260 Kent Street West
Lindsay

EC#3 : Manvers Arena
Highway 35 and Highway 7A
Bethany

14. Exposure Control Centres

ECC#1 : Anderson Street High School
Anderson Street
Whitby

ECC#2* : Clarke High School
Highway #115
Newcastle

* Combined with MDU at RCEC#2

APPENDIX 6
(Ref: Section 2.7)

TELECOMMUNICATIONS

1. All emergency centres and facilities are linked through the normal Bell and local telephone system.

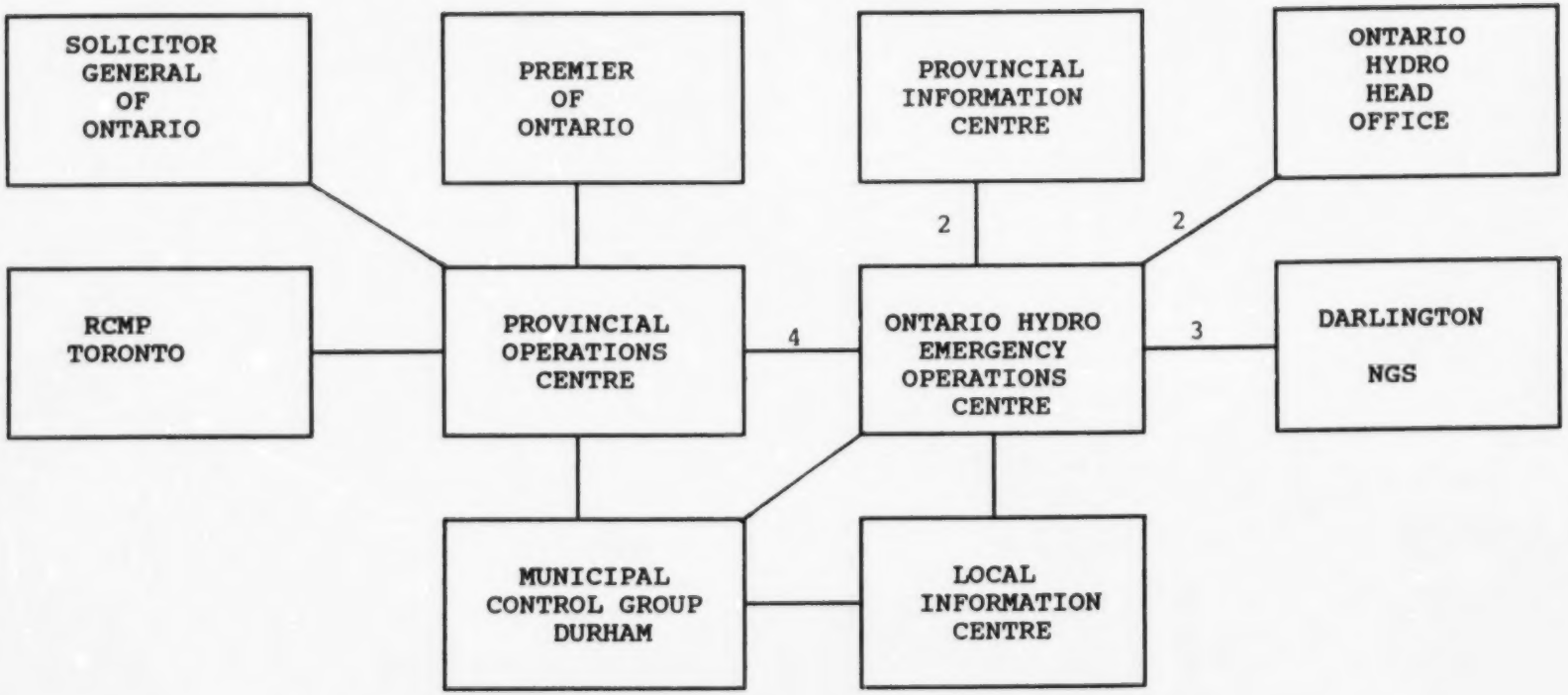
2. Additional telecommunication links available are shown as follows:

   Annex A - Special Telephone Channels

   Annex B - Ontario Government and Ontario Hydro Private Telephone Networks

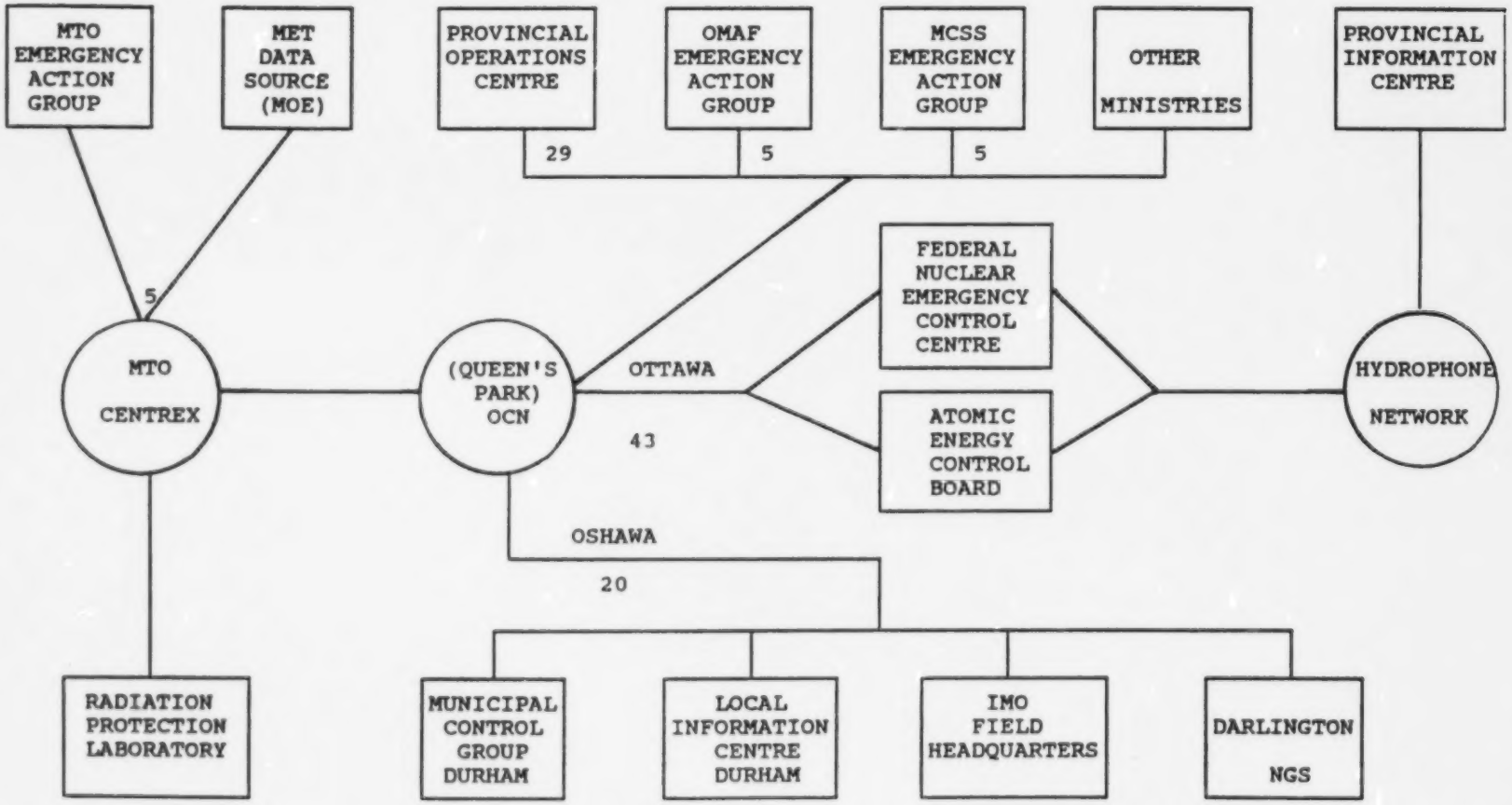
   Annex C - Radio Links

SPECIAL TELEPHONE CHANNELS



Annex A
to Appendix 6

ONTARIO GOVERNMENT AND ONTARIO HYDRO PRIVATE TELEPHONE NETWORKS



(Numbers Show Number of Channels)

Annex C
to APPENDIX 6

APPENDIX 7
(Ref: Chapter 3)

PROVINCIAL NOTIFICATION PROCEDURES AND LISTS

1. Appended in the following annexes:

   Annex A - Notification Procedure

   Annex B - Notification List #1 - Initiation of Notification

   Annex C - Notification List #2 - Operations Group

   Annex D - Notification List #3 - Technical Group

   Annex E - Notification List #4 - External Notification

2. Other Provincial notification lists will be found in other documents as shown:

Notification Lists #7-9 (Information Organization)	- In Emergency Information Procedures
Notification List #10 (Ingestion Monitoring Organization)	- In Ingestion Monitoring Organization Procedural Manual
Traffic Control Organization	- In Joint Traffic Control Plan, Darlington

ANNEX A
to APPENDIX 7

NOTIFICATION PROCEDURE

1.0 Initiation of Notification

The Coordinator, Emergency Planning Ontario, and his staff shall undertake the required authentication before initiating the fan-out notification procedure.

2.0 Fan-out Procedure

The recipient of a notification message shall record the message, and if applicable, shall use the appropriate notification list to continue the notification as follows:

(a) Call the person whose name appears first in the box or boxes directly connected to your box by directional arrows, identify yourself and dictate the message exactly as received by you.

(b) If the named individual cannot be contacted, or cannot comply with the message, call the second person named in that box and repeat the process. If necessary, go down to the third name in the box.

(c) If none of the persons in a box are available or able to comply, then proceed to the next box(es) so as to ensure the continued propagation of the fan out.

(d) In case of (c) above (i.e. a box missed out), or if any other unforeseen complication arises, inform the person shown on the top of your notification list as the Facilitator.

(e) If any recipient of a notification message has reason to doubt the validity of the message received, he or she should authenticate it by calling back the person preceding them in the chain, or any other person in the chain known to them.

3.0 Action on Being Notified

3.1 The action to be taken upon receipt of a notification message depends upon whether it activates the plan or places it on standby, as described below.

3.2 Activation

In this case the action required is:

(a) The plans/procedures of all organizations covered by the Provincial Plan shall be immediately activated.

(b) Individuals should immediately report to the prescribed place of duty, or the prescribed place of assembly of their organization.

(c) If any plan/procedure calls for certain actions to be automatically taken upon activation of the plan (eg., as in Table 4.1, page 24), then the individuals responsible shall commence implementation of these actions.

3.3 Standby

In this case the required action is:

(a) All individuals notified shall remain available at their offices or homes, as appropriate. If they leave either, they shall inform the person preceding them in the notification chain of the new telephone number at which they can be contacted.

(b) When any plan/procedure requires certain actions to be automatically taken upon a standby directive (eg., as in Table 4.1, page 24), then the individuals responsible shall commence implementation of these actions.

4.0 Responsibility of the Facilitator

4.1 The Facilitator for a notification list is responsible for the fan-out for that list being completed. If any report is received of a breakdown in the fan-out, the Facilitator shall take appropriate action, e.g.:

(a) If a box has been missed out [2.0 (c) above], keep trying to contact one of the persons in the box.

(b) If the chain of calls is broken, take over and complete notifications to the end of that chain.

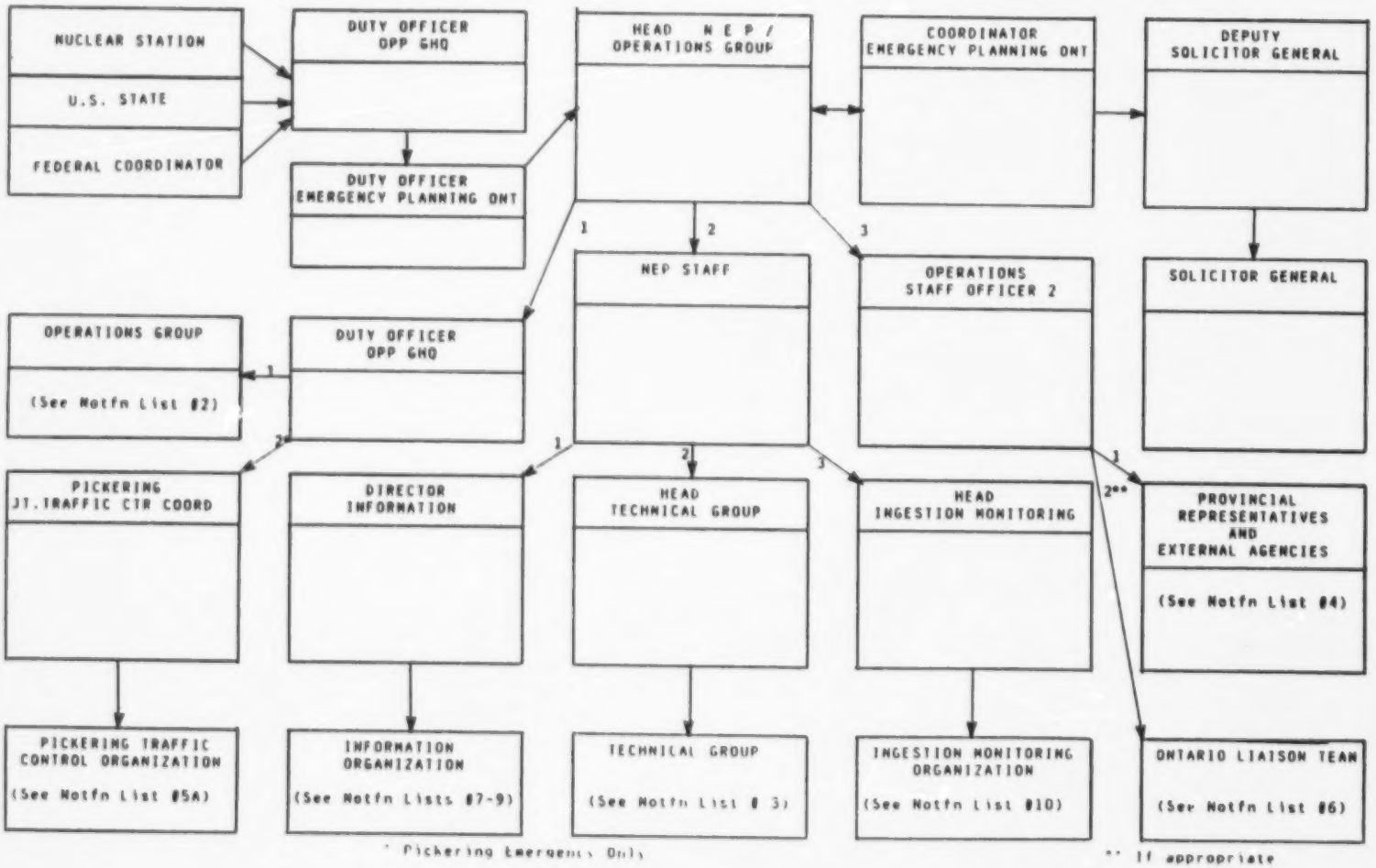
4.2 Whenever notified of a problem during a notification fan-out, the Facilitator shall, after dealing with it, report it and the action taken to the Deputy Head of the Operations Group (or an Operations Staff Officer).

PROVINCIAL NUCLEAR EMERGENCY PLAN

PROVINCIAL NOTIFICATION LIST #1 - INITIATION OF NOTIFICATION

EFFECTIVE:

FACILITATOR:



* Pickering Emergency Only

** If appropriate

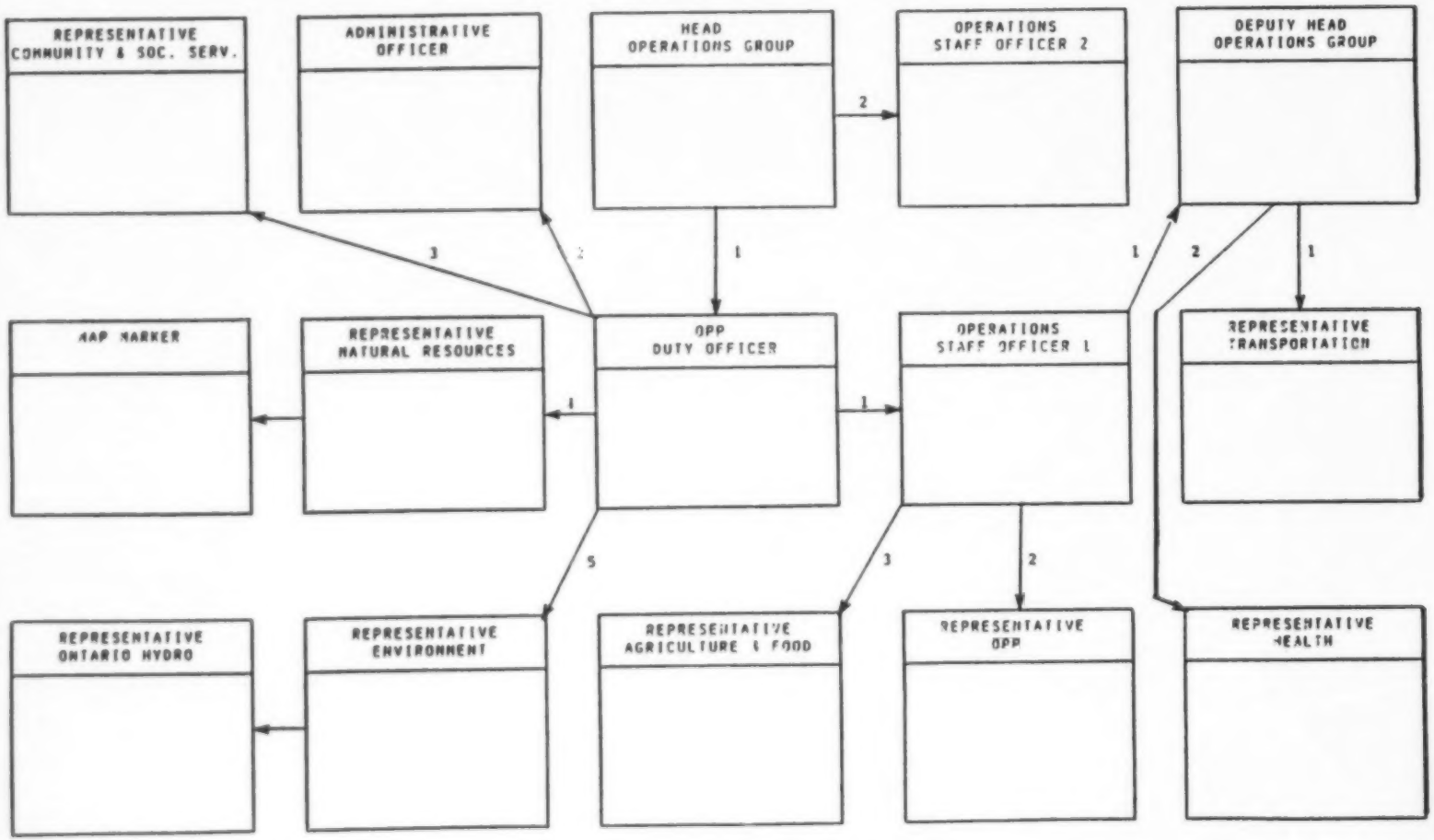
Annex B to APPENDIX 7

PROVINCIAL NUCLEAR EMERGENCY PLAN

PROVINCIAL NOTIFICATION LIST #2 - OPERATIONS GROUP

EFFECTIVE:

FACILITATOR:



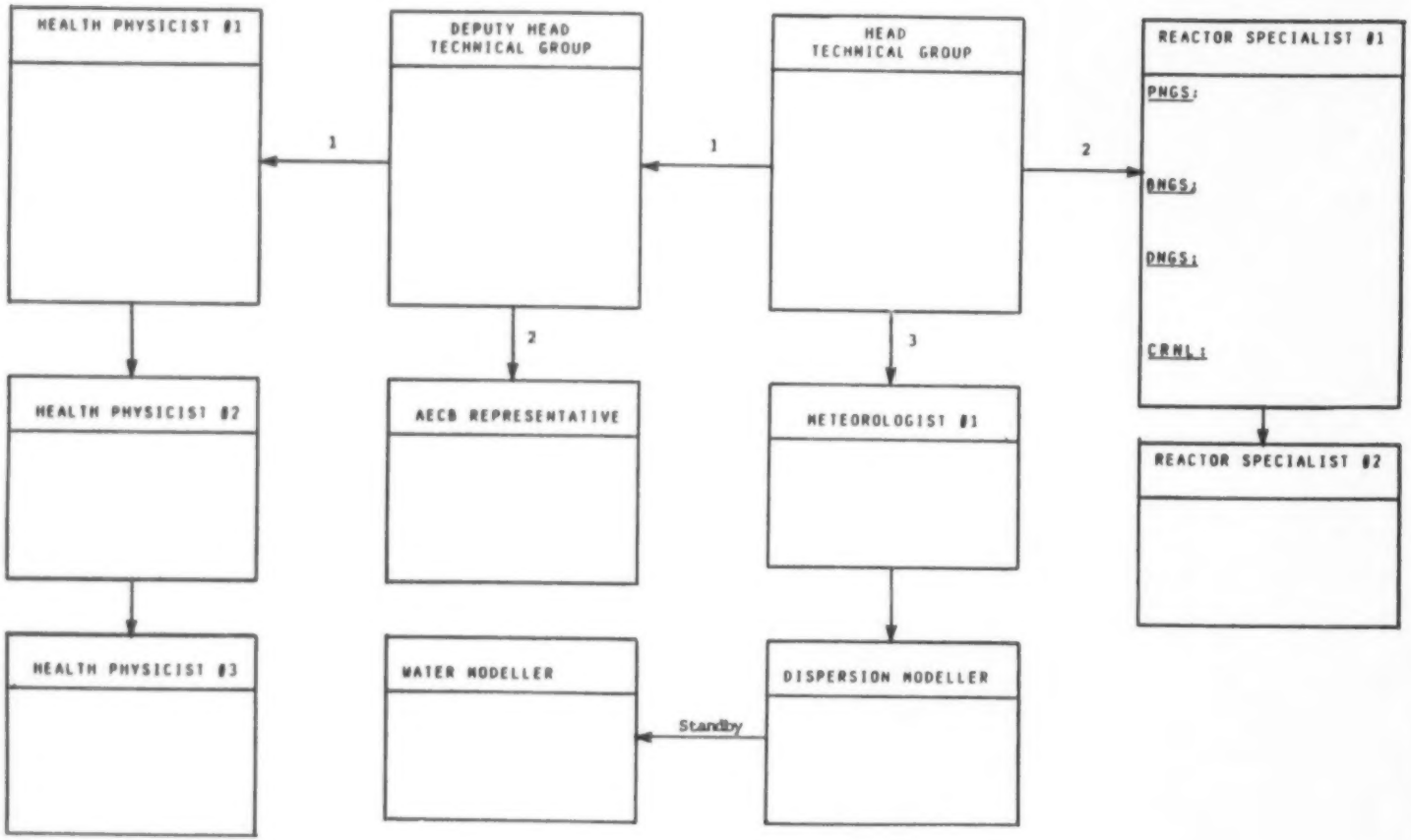
Annex C
to APPENDIX 7

PROVINCIAL NUCLEAR EMERGENCY PLAN

PROVINCIAL NOTIFICATION LIST #3 - TECHNICAL GROUP

EFFECTIVE:

FACILITATOR:



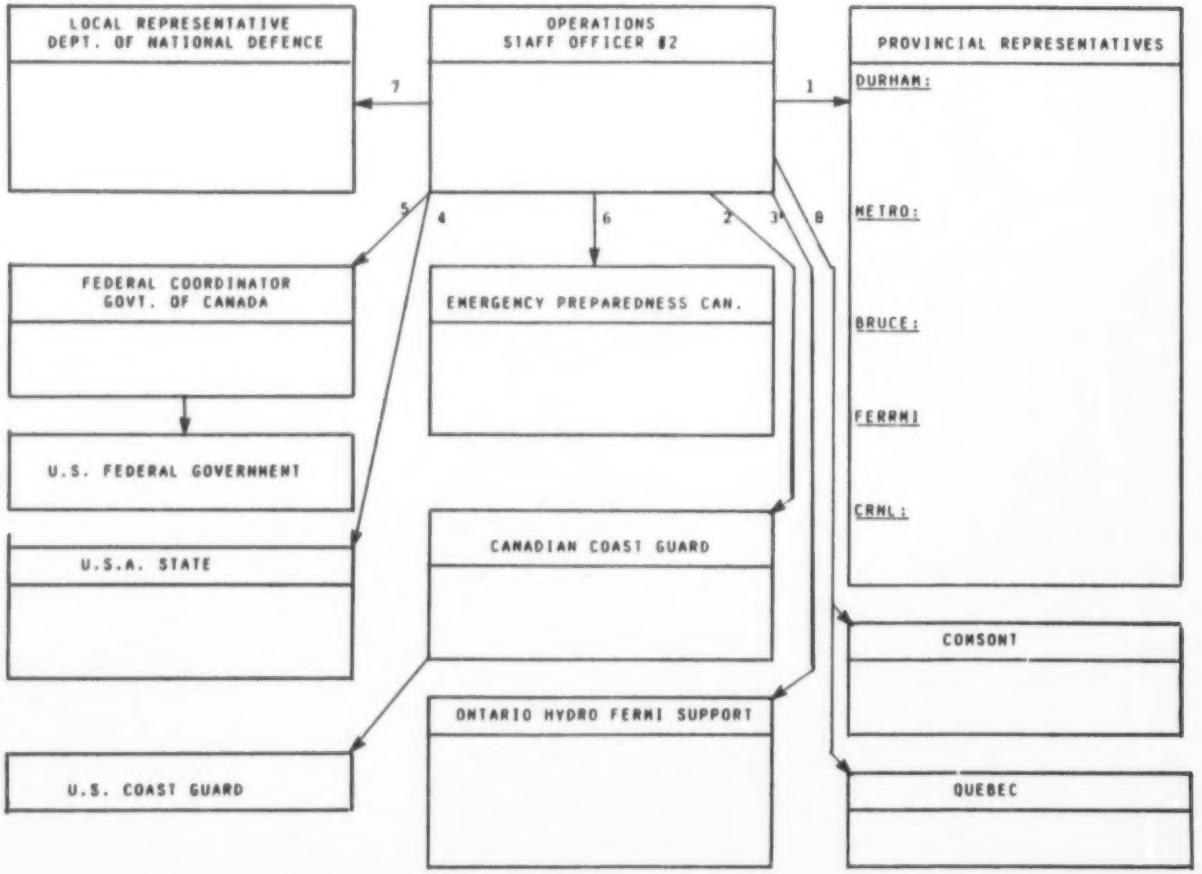
Annex D
to APPENDIX 7

PROVINCIAL NUCLEAR EMERGENCY PLAN

PROVINCIAL NOTIFICATION LIST #4

PROVINCIAL REPRESENTATIVES & EXTERNAL AGENCIES

EFFECTIVE: FACILITATOR:



Annex E
to APPENDIX 7